Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for distributing encryption keys in a Wireless Local Area Network (WLAN), ~~said WLAN having an AP and a plurality of mobile hosts storing identification information, the mobile hosts communicating with the AP through wireless channels, the AP and the external network connecting with the authentication device which authenticates the mobile hosts, the authentication device storing identification information of all mobile hosts, the method~~ comprising ~~the following steps~~:

~~(1) a mobile host sending~~ receiving, by an authentication device, an authentication request containing identification information ~~to the authentication device~~ for identity authentication from a mobile host;

~~(2) the authentication device~~ authenticating ~~the~~ said mobile host according to said identification information; ~~contained in the authentication request, and~~

if ~~the~~ authentication fails, ~~the authentication device~~ sending ~~an ACCEPT_REJECT~~ a message comprising ACCESS REJECT information to ~~the~~ said mobile host ~~via the AP~~, and

if ~~the~~ authentication succeeds, ~~the authentication device~~ sending a key-related information M1 to ~~AP and sending a message comprising ACCESS_ACCEPT information~~ an access point (AP) and a message comprising the ACCESS_ACCEPT information to ~~the~~ said mobile host ~~via the AP~~, ~~and~~

wherein if ~~containing~~ a key-related information M2 is comprised in said message comprising the ACCESS_ACCEPT information, said message ~~being~~ comprising the ACCESS_ACCEPT information is encrypted; ~~and~~

~~(3) AP obtaining the key from the~~ said key-related information M1 ~~sent from the authentication device, and the mobile host obtaining the key from said~~ is used to obtain a key by

said AP, said message ~~sent from the authentication device via the AP~~comprising the ACCESS_ACCEPT information is used to obtain the key by the mobile host.

2. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 1 wherein said key-related information M1 is the corresponding property information searched by said authentication device according to the identification information ~~contained in the authentication request~~, the method of said AP ~~obtains~~ obtaining the key comprises:

~~through~~ generating ~~it from~~ the key according to said property information with a key generation algorithm; ~~whereas~~ and the method of said mobile host ~~obtains~~ obtaining the key ~~through~~ comprises:

generating ~~it from~~ the key according to property information stored in ~~itself~~ the mobile host with the same key generation algorithm after said mobile host receives said message comprising the ACCESS_ACCEPT information ~~forwarded by AP~~.

3. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 1 wherein said key-related information M1 is the corresponding property information searched by said authentication device according to the identification information ~~contained in the authentication request~~,

the method of said AP ~~obtains~~ obtaining the key ~~through~~ comprises:

generating ~~it~~ the key with a key generation algorithm; said key-related information M2 is ~~the~~ said key generated and encrypted by said AP ~~with said property information~~ and ~~then~~ is sent to said mobile host along with said ACCESS_ACCEPT message, said mobile host ~~obtains~~ obtaining the key through decrypting information M2 with said property information.

4. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 1 wherein said key-related information M1 is the key generated from said property information corresponding to the identification information contained in said authentication request by said authentication device with a key generation algorithm, the method of said mobile host ~~obtains~~ obtaining the key comprises:

~~through~~ generating ~~it from~~ the key according to said property information stored in ~~itself~~ the mobile host with the same key generation algorithm after receiving said ACCESS_ACCEPT message.

5. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 1 wherein said information M1 and M2 are the key generated from said property information corresponding to the identification information contained in said authentication request by said authentication device with a key generation algorithm, said information M2 is encrypted with said property information and then sent to said mobile host along with said ACCESS_ACCEPT message, the method of said mobile host ~~obtains~~ obtaining the key comprises:

~~through~~ decrypting said information M2 ~~with~~ according to the property information stored in ~~itself~~ the mobile host after receiving said ACCESS_ACCEPT message.

6. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 1 wherein when receiving data packets encrypted with a key sent from the mobile host, said AP updates the key through the following steps of:

(a1) said AP generating a random number and generating a new key from said random number with any key generation algorithm;

(b1) said AP adding said random number to a key update message and then sending said message to said mobile host;

(c1) when receiving said key update message, said mobile host generating a new key from said random number contained in said key update message with the same key generation algorithm as that in step (a1);

(d1) said mobile host encrypting the data packets to be sent to the AP with said new key and then sending the encrypted data packets to the AP, during the encryption process, said mobile host adding an encryption identifier to said data packets and changing the value of said encryption identifier to indicate the communication key has been changed; and

(e1) when receiving the data packets from said mobile host, said AP ~~determines~~ determining whether to change the key according to value of said encryption identifier.

7. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 1 wherein in order to achieve encryption communication with the new key, when receiving the data packets encrypted with the key sent from said mobile host, said AP updates the key periodically or aperiodically through the following steps of:

(a2) said AP generating a new key in any way and encrypting said new key with the present key;

(b2) said AP adding the encrypted key to the key update message and then sending said message to said mobile host;

(c2) when receiving said key update message, said mobile host decrypting the new key contained in said key update message with the present key so as to obtain said new key;

(d2) said mobile host encrypting the data packets to be sent to AP with said new key and then sending the encrypted data packets to AP, during the encryption process, said mobile host adding an encryption identifier to said data packets and changing the value of said encryption identifier to indicate the communication key has been changed; and

(e2) when receiving the data packets from said mobile host, said AP determines whether to change the key according to value of said encryption identifier.

8. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 1 wherein when receiving the data packets encrypted with the key sent from said mobile host, said AP updates the key periodically or aperiodically through the following steps of:

(a3) said Authentication device generating a random number which is used to generate a new key with the key generation algorithm, and then said authentication device sending said new key to AP, and sending said random number to said mobile host via AP;

(b3) said AP sending said key update message to said mobile host after receiving said new key;

(c3) when receiving said random number from said authentication device and said key update message from AP, said mobile host generating a new key from said random number with the same key generation algorithm as that in step (a3);

(d3) said mobile host encrypting the data packets to be sent to AP with said new key and then sending the encrypted data packets to AP, during the encryption process, said mobile host adding an encryption identifier to said data packets and changing the value of said encryption identifier to indicate the communication key has been changed; and

(e3) when receiving the data packets from said mobile host, said AP determines whether to change the key according to value of said encryption identifier.

9. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 1 wherein in order to achieve encryption communication with the new key, when receiving the data packets encrypted with the key sent from said mobile host, said AP updates the key periodically or aperiodically through the following steps of:

(a4) said AP generating a new key in any way and encrypting said new key with the present key, then sending said new key to said AP, whereas sending the encrypted new key to said mobile host via said AP;

(b4) after receiving said new key, said AP sending a key update message to said mobile host;

(c4) when receiving the encrypted key from said authentication device and said key update message from said AP, said mobile host decrypting the encrypted key with the present key to obtain a new key;

(d4) said mobile host encrypting the data packets to be sent to AP with said new key and then sending the encrypted data packets to AP, during the encryption process, said mobile host adding an encryption identifier to said data packets and changing the value of said encryption identifier to indicate the communication key has been changed; and

(e4) when receiving the data packets from said mobile host, said AP determines whether to change the key according to value of said encryption identifier.

10. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 1 wherein said authentication device is an authentication server installed in ~~said~~ external network.

11. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 6 wherein said authentication device is an authentication server installed in ~~said~~ external network.

12. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 7 wherein said authentication device is an authentication server installed in ~~said~~ external network.

13. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 8 wherein said authentication device is an authentication server installed in ~~said~~ external network.

14. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 9 wherein said authentication device is an authentication server installed in ~~said~~ external network.

15. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 1 wherein said authentication device is a wireless gateway that connects said AP with ~~said~~ external network.

16. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 6 wherein said authentication device is a wireless gateway that connects said AP with ~~said~~ external network.

17. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 7 wherein said authentication device is a wireless gateway that connects said AP with ~~said~~ external network.

18. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 8 wherein said authentication device is a wireless gateway that connects said AP with ~~said~~ external network.

19. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 9 wherein said authentication device is a wireless gateway that connects said AP with ~~said~~ external network.

20. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 1 wherein said authentication device includes ~~said~~ a wireless gateway and said authentication server installed in external network.

21. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 6 wherein said authentication device includes ~~said~~ a wireless gateway and said authentication server installed in external network.

22. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 7 wherein said authentication device includes ~~said~~ a wireless gateway and said authentication server installed in external network.

23. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 8 wherein said authentication device includes ~~said~~ a wireless gateway and said authentication server installed in external network.

24. (Currently Amended) The method for distributing encryption keys in the WLAN of claim 9 wherein said authentication device includes ~~said~~ a wireless gateway and said authentication server installed in external network.

25. (New) An authentication device, comprising:

a receiving module configured to receive an authentication request from a mobile host, said authentication request comprising identification information for identity authentication;

an authentication module configured to authenticate said mobile host according to said identification information;

a sending module configured to send a message comprising ACCESS_REJECT information to said mobile host if authentication fails, to send a key-related information M1 to an access point (AP) and to send a message comprising the ACCESS_ACCEPT information to said mobile host if authentication succeeds.

26. (New) A system, comprising:

a mobile host, an authentication device, and an access point (AP);

said authentication device configured to receive an authentication request from said mobile host, said authentication request comprising identification information for identity authentication, for authenticating said mobile host according to said identification information, for sending an ACCEPT_REJECT message to said mobile host if authentication fails, for sending key-

related information M1 to an access point (AP), and for sending a message comprising ACCESS_ACCEPT information to said mobile host if authentication succeeds;

said mobile host configured to send an authentication request containing identification information for identity authentication and obtaining a key according to said message comprising the ACCESS_ACCEPT information; and

said AP configured to receive said key-related information M1 and obtain key according to said key-related information M1.